
Effects of Patellar Taping on Brain Activity During Knee Joint Proprioception Tests Using fMRI



eFigure.

Setup in the scanner.

Effects of Patellar Taping on Brain Activity During Knee Joint Proprioception Tests Using fMRI

eTable 1.

Effect of Knee Movement Across All 4 Conditions (Proprioception and Simple Tasks, With and Without Patellar Taping): Standard Parametric Mapping-Montreal Neurological Institute Coordinates of Brain Areas (mm), Brodmann Areas, and *t*-Test Values of Peak Activation in the Regions of Interest at $P(FWE) < .05$ Small Volume Corrected for Multiple Comparisons^a

Talairach Regions	Brodmann Areas	Side	Brain Area	<i>t</i>	z Score	x	y	z
Postcentral/precentral gyrus	2	L	SM2	5.93	4.73	-51	-24	30
Medial frontal gyrus	6	L	SMA proper	3.68	3.30	-3	-12	54
		R	SMA proper	3.40	3.09	3	-21	57
Precentral gyrus	6	L	S1	7.01	5.28*	-54	-3	15
		L	PMd	5.60	4.55	-45	-6	42
		R	PMd	4.16	3.64	42	-3	36
Inferior frontal gyrus	9	L	PMv	6.23	4.89*	-51	3	36
		R	PMv	3.46	3.13	33	18	30
Insula	13	L	S2	8.24	5.83*	-48	3	15
		R	S2	4.25	3.70	33	12	18
Superior temporal gyrus	22	L		7.47	5.50*	-51	-18	0
Cingulate gyrus	24	L	CMA	5.39	4.43	-9	-3	30
		R	CMA	5.09	4.25	9	0	30
Anterior cingulate	32	L		5.90	4.71	-18	18	24
Middle temporal gyrus	37	L		6.65	5.11*	-51	-63	3
Inferior parietal lobule	40	L	S2	6.97	5.26*	-51	-33	27
		R	S2	3.79	3.37	48	-39	24
Superior temporal gyrus	41	L		6.81	5.19*	-36	-33	12
Caudate	Body	L		8.06	5.75*	-21	0	18
		R		4.95	4.16	21	3	15
Brain stem	VTA	L		6.44	5.01*	-6	-9	-9
		R		5.30	4.37	12	-9	-9
Lentiform nucleus	Putamen	L	BG/T	5.31	4.38	-30	-15	12
		R	BG/T	5.80	4.06	30	-9	9
Thalamus	VLN	L	BG/T	5.47	4.47	-12	-15	6
		R	BG/T	4.00	3.53	15	-15	9
Cerebellum	Vermis			8.47	5.92*	0	-48	-18
	Culmen	L		7.80	5.64*	-21	-36	-27
	Declive	L		5.60	4.55	-36	-60	-24
	Uvula	L		4.10	3.60	-21	-75	-48
	Uvula	R		4.87	4.11	15	-75	-42
Anterior cingulate	24			-3.92**	3.47	-3	39	9
	32			-5.21**	4.32	-3	48	-12
Superior frontal gyrus	6	L	SMA	-3.13**	2.87	-15	15	66
		R	SMA	-4.36**	3.78	6	15	66
		L		-4.54**	3.90	-42	18	51
		R		-4.36**	3.78	-30	27	51
Postcentral gyrus	1	L	S1	-3.72**	3.32	-45	-24	60
		R	S1	-3.62**	3.25	39	-21	57
	5	L	SM1	-3.58**	3.30	-9	-60	63
		R	SM1	-4.15**	3.63	9	-60	63

^a Talairach regions=refers to the standard atlas of brain regions. L=left, R=right, VTA=ventral tegmental area, VLN= ventral lateral nucleus, SM1=primary sensorimotor cortex, SM2=secondary sensorimotor cortex, SMA=supplementary motor area, S1=primary sensory cortex, S2=secondary sensory cortex, PMd=dorsal premotor cortex, PMv=ventral premotor cortex, CMA=cingulate motor area, BG/T= basal ganglion/thalamus, x, y, and z=3-dimensional x, y, and z coordinates.* $P(FWE) < .05$ for whole brain; **negative blood oxygen level-dependent (BOLD) contrast.

Effects of Patellar Taping on Brain Activity During Knee Joint Proprioception Tests Using fMRI

eTable 2.

Effect of Knee Movement Under Tape Versus No Tape: Standard Parametric Mapping-Montreal Neurological Institute Coordinates (mm) and Brodmann Areas of Peak Activation in the Regions of Interest at $P(FWE) < .05$ Small Volume Corrected for Multiple Comparisons^a

Talairach Regions	Brodmann Areas	Brain Area	Side	t	z Score	x	y	z
Tape > no tape								
Precentral gyrus	6/44	SM1	L	2.67	2.50*	-54	-21	45
		SM1	R	3.16	2.90*	48	-6	42
No tape > tape								
Anterior cingulate	24		L	4.05	3.56	-12	36	9
Cerebellum	Uvula		L	4.22	3.68	-21	-87	-27
			R	4.43	3.82	12	-84	-33
Anterior cingulate	32		L	3.53**	3.18	-6	57	6
Postcentral gyrus	2	S1	R	3.90**	3.46	42	-33	57

^a Talairach regions=refers to the standard atlas of brain regions. L=left, R=right, SM1=primary sensorimotor cortex, S1=primary sensory cortex. x, y, and z=3-dimensional x, y, and z coordinates. *Value does not survive small volume correction but is bilateral; **negative blood oxygen level-dependent (BOLD) contrast for tape.

eTable 3.

Effect of Knee Movement Doing Simple Task Versus Proprioception Task: Standard Parametric Mapping-Montreal Neurological Institute Coordinates (mm), Brain Areas and Brodmann Areas of Peak Activation in the Regions of Interest at $P(FWE) < .05$ Small Volume Corrected For Multiple Comparisons^a

Talairach Regions	Brodmann Areas	Brain Area	Side	t	z Score	x	y	z
Simple task > proprioception task								
Paracentral lobule	6	SMA proper	R	3.40	3.08	9	-27	51
Precentral gyrus	44	PMd	R	3.09	2.84*	39	0	30
		Rolandic operculum	L	3.37	3.06	-54	-3	15
Cerebellum	Vermis			5.79	4.65	0	-66	-12
				3.69	3.30	-3	-36	-12
Brain stem	VTA			3.92	3.47	0	-6	-9
Proprioception task > simple task								
Middle frontal gyrus	6	SMA	L	2.60**	2.44*	-30	-3	69
			R	4.26**	3.71	27	-6	63
Superior frontal gyrus	6	Pre-SMA		3.84**	3.41	6	3	66

^a Talairach regions=refers to the standard atlas of brain regions. L=left, R=right, VTA=ventral tegmental area, SMA=supplementary motor area, PMd=dorsal premotor cortex, pre-SMA=pre-motor cortex. x, y, and z=3-dimensional x, y, and z coordinates. *Value does not survive small volume correction but is bilateral; **negative blood oxygen level-dependent (BOLD) contrast for simple task.